

CHAPTER 63 EVALUATE FAR PART 121/135.411(A)(2) COMPANY MANUAL/REVISION

Section 1 Background

1. PTRS ACTIVITY CODES

A. *Maintenance*: 3302

B. *Avionics*: 5302

3. OBJECTIVE. This chapter provides guidance for evaluating an operator/applicant's company manual or revision to ensure that policies, procedures, and technical criteria meet regulatory requirements.

5. GENERAL

A. A company manual should enable the operator's maintenance and servicing personnel to carry out their duties at a high level of safety. The complexity of the manual will vary with the complexity of the operation. The manual must cover specific items in accordance with the Federal Aviation Regulations, but may include additional items at the discretion of the applicant. A manual is therefore accepted rather than approved.

B. Manual acceptance can be a cause of delay in the certification process.

(1) If the operator/applicant does not have experienced and qualified personnel to prepare an acceptable manual, the use of a consultant may be appropriate. A consultant can be used in an advisory position only.

(2) After the review, the manual must be returned to the operator/applicant with a list of any discrepancies found. The operator/applicant must be informed that final certification will not be completed until discrepancies are corrected. Inspectors should be concerned primarily with ensuring regulatory compliance.

7. REVIEWING OPERATOR/APPLICANT'S MANUAL

A. The manual is an administrative tool used to control and direct personnel. It should define all aspects of the maintenance operation.

(1) The policies and procedures section should address organizational matters.

(2) The maintenance section should address policies and procedures for administering the inspection and maintenance requirements, test flight requirements, and other subjects, as applicable.

B. The manual should include detailed instructions or specific references for accomplishing inspection and maintenance functions. It should also include forms, instructions, and references for recurring non-routine requirements such as engine changes and inspections following abnormal occurrences (hard landings, lightning strikes, severe turbulence, high brake energy stops, etc.).

C. Manufacturers' technical manuals provide instructions for accomplishing specific tasks. These documents also establish methods, technical standards, measurements, and operational test procedures. The policy and procedures section of the operator's manual must describe areas of application for the pertinent technical documents.

D. The following are examples of manual sections and titles:

- General policy and procedures
- Inspection procedures

- Maintenance procedures
- Training
- Wiring
- Parts
- Overhaul
- Structural repair
- Manufacturers or vendors
- Weight and balance control
- Servicing

E. Manuals must be easy to revise and must show the date of last revision on each page. The manuals must

have a page control system showing the number of pages and including the latest revision. The page control system is usually identified as a list of effective pages.

F. The operator/applicant is responsible for ensuring that manuals present adequate guidance to meet all regulatory requirements. The operator/applicant must understand and accept this responsibility early in the certification process.

G. An Aviation Safety Inspector (ASI) may, when necessary, formally request revision to any part of the maintenance manual when such revision is in the interest of safety, or when the manual does not meet regulatory requirements. An ASI also may formally request revision to any part of the maintenance manual when such revision is in the interest of safety, or when the manual does not meet the requirements of the applicable FAR. This authority should be used only when the need for revisions is adequately substantiated by safety considerations or FAR requirements and when informal discussions with the operator fail to accomplish the necessary revision.

Section 2 Procedures

1. PREREQUISITES AND COORDINATION REQUIREMENTS

A. *Prerequisites*

- Knowledge of the regulatory requirements of FAR Parts 121 and 135
- Successful completion of the Airworthiness Inspectors Indoctrination Course or equivalent

B. *Coordination.* This task requires close coordination between Airworthiness ASIs, and, in some areas, Operations ASIs.

3. REFERENCES, FORMS, AND JOB AIDS

A. *References*

- Section 604 of the FA Act of 1958, as amended

- FAR Parts 43 and 91

- 49 CFR Part 173

B. *Forms.* None.

C. *Job Aids.* None.

5. PROCEDURES

A. *Brief Operator/Applicant.* Provide the operator/applicant with policies and regulatory requirements. Schedule and conduct a preliminary meeting, if necessary.

B. *Review Schedule of Events.* If this task is to be performed as part of an original certification, review the schedule of events to ensure that the task can be accomplished according to the schedule.

C. *Evaluate General Manual Requirements.* Ensure that the operator/applicant's policies and procedures manual describes procedures, levels of authority, and information appropriate to FAR Parts 121 or 135, as applicable.

(1) The manual must include a description introducing its philosophy and goals. If it is in more than one volume, the manual must describe the division of contents between the volumes. The manual must also contain a list of effective dates.

(2) Manual revision and distribution procedures to provide current information to all manual holders are required. The manual must include provisions to make it available to maintenance and ground personnel and to furnish a copy to the FAA Certificate Holding District Office (CHDO).

(3) Significant terms, acronyms or abbreviations unique to the manual must be defined. Common industry terms need not be defined as long as the common meaning is intended. Terms clearly defined in the text need not be included.

(4) The manual must detail requirements for supplemental air carriers and commercial operators to carry the appropriate parts of the manual on the aircraft, if applicable. If manuals are on microfilm, procedures to ensure that readers are aboard the aircraft are required.

D. Ensure that the Manual Contains Required Organizational Elements. Check for the following:

(1) The names of all management personnel authorized to sign applicable operations specifications and act on behalf of the operator/applicant

(2) Organizational charts that must include:

- Lines of authority
- Maintenance organization and support structures

(3) Job descriptions for all elements noted above

(4) Procedures for, and a description of, a training program ensuring that:

- All personnel, including inspection personnel, are fully informed of procedures and techniques currently in use

- All personnel are competent to perform their duties
- A method of documenting and retaining training records is established

E. Ensure that the Manual Contains Compliance Procedures. Check for the following:

(1) Procedures to ensure compliance with aircraft weight and balance limitations. These are to include:

- Pre-weighing and weighing requirements
- Necessary equipment
- Standards
- Forms and documents

(2) The operator/applicant's operations specifications, or appropriate extracted information (must retain identity as operations specifications)

(3) Procedures, policies, instructions and controls for the use of the Minimum Equipment List and Configuration Deviation List, if applicable

(4) Procedures, standards, and limits for periodic inspection and calibration of precision tools, measuring devices, and test equipment

F. Evaluate Manual Contents. The certificate holder's company manual must describe procedures and provide information appropriate to the applicable Federal Aviation Regulations.

(1) *Manual description.* The inspector must ensure that manual description and procedures meet the requirements of FAR §§ 121.135(a) and 135.23(a).

(2) *Manual revision and distribution procedures.* The certificate holder's manual must describe the revision control procedures and how the distribution of manuals will be controlled (Ref FAR Sections 121.135(a), (c), and 121.137; sections 135.21(b) through (g); and 135.23).

(a) Manuals must be easy to revise and have the date of last revision on each page. The manuals must have a page control system that shows the number of pages and ensures that the latest revision is included. The page control system is usually identified as a list of effective pages (Ref. FAR §§ 121.135(a) and 135.23).

(b) Manuals must have a distribution system that meets the requirements of FAR §§ 121.137 or 135.21, as appropriate.

(3) *Definitions.* Any terms contained in the manual that are unique to the operator's operation must be defined. (Ref. FAR §§ 121.135(B)(24) and 135.23(r))

(4) *A chart or description of the certificate holder's organization.* The organizational chart must describe, at a minimum, the management personnel and major functions. However, it is recommended that the chart cover the operator's entire organization. (Ref. §§ 121.369(a) and § 135.427(a))

(5) *A list of inspection personnel.* This list must include persons with whom the certificate holder has arranged to perform any of its required inspections, other maintenance, preventive maintenance, or alterations, including a general description of the work. (Ref. FAR §§ 121.369(a) and 135.427(a))

(6) *An inspection program and a program covering other maintenance, preventive maintenance, and alterations.* . The program must ensure the following (Ref. FAR §§ 121.369(b) and 135.427(b)):

(a) Maintenance, preventive maintenance, and alterations are performed in accordance with the certificate holder's manual (Ref. FAR §§ 121.367(a) and 135.425(a))

(b) Competent personnel, adequate facilities, and equipment are provided for accomplishing maintenance, preventive maintenance, and alterations (Ref. FAR §§ 121.367(b) and 135.425(b))

(c) Each aircraft released to service is airworthy and properly maintained (Ref. FAR §§ 121.367(c) and 135.425(c))

(7) The manual must include the duties and responsibilities of appropriate members of the ground organization personnel (Ref. FAR §§ 121.135(b)(2) and 135.23(a))

(8) For supplemental air carriers, FAR Part 135 operators, and commercial operators, the manual must include the duties and responsibilities of management personnel, including the names and addresses of those required by FAR §§ 121.59(c), 121.135(b)(2), and 135.23(a).

(9) The manual is required to include programs that must be followed while performing maintenance, preventive maintenance, and alterations of the certificate holder's aircraft, including airframes, aircraft engines, propellers, rotors, appliances, and emergency equipment (Ref. FAR §§ 121.369(b) and 135.427(b)). These programs must include at least the following:

(a) A method for performing routine and non-routine maintenance (other than required inspections), preventive maintenance, and alterations (FAR §§ 121.369(b)(1) and 135.427(b)(1))

(b) A designation of items of maintenance and alteration that must be inspected (required inspections). The designations should include at least those items which, if maintenance is not performed properly or if improper parts or materials are used, could result in a failure, malfunction, or defect endangering the safe operation of the aircraft (Ref. FAR §§ 121.369(b)(2) and 135.427(b)(2)).

(c) A method of performing required inspections and the occupational title(s) of persons authorized to perform each required inspection (Ref. FAR §§ 121.369(b)(3) and 135.427(b)(3))

(d) Procedures for reinspecting work performed under previous required inspection findings ("buy-back" procedures) (Ref. FAR §§ 121.369(b)(4) and 135.427(b)(4))

(e) Procedures, standards, and limits necessary for required inspections and acceptance or rejection of inspected items (Ref. FAR §§ 121.369(b)(5) and 135.427(b)(5))

(f) Procedures, standards, and limits necessary for periodic inspection and calibration of precision tools, measuring devices, and test equipment (Ref. FAR §§ 121.369(b)(5) and 135.427(b)(5))

(g) Procedures to ensure that all required inspections are performed (Ref. FAR §§ 121.369(b)(5) and 135.427(b)(5))

(h) Instructions to prevent any person who performs work on any item from performing required inspection of that work (Ref. FAR §§ 121.369(b)(7) and 135.427(b)(7))

(i) Per FAR §§ 121.369(b)(8) and 135.427(b)(8), instructions and procedures to prevent any decision of an inspector regarding a required inspection from being rescinded by persons other than those listed below:

- Supervisory personnel of the inspection unit
- A person at a supervisory level of administrative control who has overall responsibility for the management of both the required inspection functions and the other maintenance, preventive maintenance, and alterations functions

(j) Procedures to ensure that required inspections, maintenance, preventive maintenance, and alterations not completed as a result of employee shift changes or similar work interruptions are properly completed before the aircraft is released to service (Ref. FAR §§ 121.369(b)(9) and 135.427(b)(9))

(k) Instructions and procedures for maintenance, preventive maintenance, and servicing (Ref. FAR §§ 121.135(b)(16) and 135.23(h))

(l) Time limitations or standards for determining time limitations for overhauls, inspections, and checks of airframes, engines, propellers, appliances, and emergency equipment (Ref. FAR §§ 121.135(b)(17) and 135.11(b)(2)(iii))

(m) Procedures for aircraft refueling, elimination of fuel contamination, fire protection (including electrostatic protection), and supervision and protection of passengers during refueling (Ref. FAR §§ 121.135(b)(18) and 135.23(j))

(n) Airworthiness inspections, including instructions covering procedures, standards, responsibilities, and authority of inspection personnel (Ref. FAR §§ 121.369(b)(19) and 121.369(b)(6), (7), and (8); 135.427(b)(6), (7), and (8))

(o) Methods and procedures for maintaining the aircraft's weight and center of gravity within approved limits (Ref. FAR §§ 121.135(b)(20), 121.25(b)(7), 121.45(b)(7), 135.23(b), 135.63(c), and 135.185))

(p) A suitable system, which may include a coded system, providing for preservation and retrieval of information in a manner acceptable to the Administrator and which provides the following (Ref. FAR §§ 121.369(c) and 135.427(c)):

- A description of the work performed or reference to data acceptable to the Administrator
- The name of the person performing the work if the work is performed by a person outside the organization of the certificate holder
- The name or other positive identification of the individual approving the work

(10) References to appropriate Federal Aviation Regulations are required to be in the manual by FAR § 121.135(b)(3). (Not required for Part 135)

(11) The manual must include training programs to ensure that each person who determines the adequacy of the performance of maintenance and preventive maintenance is

competent to perform the necessary duties and is fully informed about procedures, techniques, and new equipment in use. (Ref. FAR §§ 121.375 and 135.433). Applicable training programs should include a training program description, maintenance training requirements, and information about the frequency of training.

(12) Copies of operations specifications, Parts D and E, are normally included in the manual. The operator may decide, however, to insert pertinent excerpts of its operations specifications or reference the operations specifications which must be done in such a manner that they retain their identity as operations specifications (Ref. FAR §§ 121.75(b) and 135.23(c)).

(13) The manual must provide procedures for the reporting and correction of mechanical irregularities. These procedures must address the following:

(a) The recording of actions in the aircraft maintenance log (Ref. FAR §§ 121.563, 121.701, and 135.65)

(b) The method of ensuring that the aircraft maintenance log is readily accessible to each flight crewmember (Ref. FAR §§ 121.701 and 135.65)

(c) The Minimum Equipment List (Ref. FAR §§ 121.303(d) and 121.627(b); 135.23(i) and 135.179)

(d) The Minimum Equipment Lists placard system

(e) Deferred maintenance

(f) Airworthiness release procedures, or maintenance record entries in the maintenance section of the manual, that include a certification that:

- Work was performed in accordance with the requirements of the manual
- All items required to be inspected were inspected

- No known condition exists that would make the airplane unairworthy
- So far as the work performed is concerned, the airplane is in condition for safe operation

NOTE: Rather than restate the above requirements each time an airworthiness release is executed, the operator/applicant may provide a statement in the manual that the signature of a properly authorized person constitutes that certification.

(g) The determination of qualifications and authorization of persons to perform airworthiness releases

(h) Definition of when an airworthiness release is required

(i) The form and manner in which an airworthiness release will be documented

(j) Provision of a copy to the pilot in command

(k) A list of required maintenance-related forms and the requirements for preparation

(l) Distribution of required reports and forms (Ref. FAR §§ 121.703, 121.705, and 121.707; 135.415 and 135.417)

(14) The manual must provide procedures to ensure that proper parts and materials are used (Ref. FAR §§ 121.369(b), 121.105, 121.123, and 135.427(b)), including:

- Receiving inspection
- Shelf time
- Preservation of parts
- Parts identification system
- Disposition of failed parts

(15) The manual must provide the specifics of the operator's continuing analysis and surveillance program (Ref. FAR §§ 121.373 and 135.431), including:

- Audit system
- Mechanical performance

(16) Test flight requirements and limitations (FAR § 91.167) are required to be in the manual. These include:

- Items requiring test flight
- Procedures for performing test flight

(17) The manual must include ferry flight limitations and procedures

(18) The manual must provide procedures for the following:

- Reporting the occurrence or detection of each failure, malfunction or defect of mechanical reliability (mechanical reliability reports)
- Reporting each interruption to a flight, unscheduled change of aircraft en route, or unscheduled stop or diversion from a route caused by known or suspected mechanical difficulties (Mechanical Interruption Summary Report)
- Submitting required aircraft and engine utilization reports to the CHDO
- Ensuring that all major alteration reports are submitted to the CHDO
- Ensuring that reports of major repairs are prepared and retained by the operator (these may be in the form of engineering orders, if the operator/applicant is so structured)

(19) The manual must also contain other procedures, as appropriate (Ref. FAR §§ 121.135(b)(24), 121.369(b)(1), 135.23(r), and 135.427(b)(1)), including:

- Parking aircraft in high winds
- Short-term storage
- Long-term storage
- Seasonal operation
- Removing ice and snow from aircraft
- Towing
- Emergency procedures
- Run-up/taxi personnel authorizations
- Aircraft ground run-up
- Taxiing aircraft
- Ramp signals and procedures
- Jacking, lifting, and hoisting
- Use of landing gear down locks
- Use of external gust locks
- Aircraft cleaning, including materials used for cleaning and flame-proofing materials after dry cleaning (Ref. FAR § 43.13)
- Engine change
- Propeller change
- Cylinder change
- Engine and propeller overspeed
- High oil consumption
- Oil leaks
- Engine and propeller troubleshooting
- Oxygen and nitrogen servicing and storage

(20) The manual must include additional maintenance for Category II or Category III operations, if applicable (See Vol. II, Ch. 3)

G. *Analyze Results.* Upon completion of review, analyze the results and determine whether the operator/applicant's manual meets all requirements.

H. *Debrief Operator/Applicant.* Discuss discrepancies and advise what areas need corrective action.

7. TASK OUTCOMES

A. *File PTRS Transmittal Form*

B. *Document Task.* File all supporting paperwork in the operator/applicant's office file.

9. FUTURE ACTIVITIES.

Normal surveillance.